The Center and the Periphery: The Globalization of Financial Turmoil

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The Current Debate

• The financial turmoil of the 1990s has triggered concerns about:
  – Contagion
  – Systemic risk.

• New proposals (on codes and standards, monetary arrangements, the role of international institutions, and securities law) to create a bulwark to prevent contagion.
Previous Research

• The literature on contagion has developed along two complementary strands in recent years.
• First, the earlier studies attempted to document the incidence of contagion or establish whether there is such a beast.
• Second, many studies have primarily sought to discriminate among the possible channels of transmission of disturbances:
  – trade links
  – common foreign bank lenders
  – Cross-market hedging
What is different about this paper?

• Origins?
• Patterns of transmission?
• Spillover of extreme events
• What do we need for systemic crises?
  – Is it extreme shocks in financial centers?
  – Or just extreme shocks in crisis-prone emerging markets?
• Two new Measures of Globalization
  – Weak-Form and Strong-Form Globalization
• We link the days of high regional and world globalization to key world events.
Data

• Thirty five mature and emerging countries:
  – G-7 countries
  – Asia
  – Europe
  – Latin America
  – Transition economies

• Stock Market Indices

• Daily data from January 1, 1997 to August 31, 1999.
Regional Globalization
Regional Globalization
World Globalization
Weak-Form Globalization

• Focus on days of turmoil, which are defined as days with returns in the 5th and 95th percentiles.

• Examine the degree of spillover conditional on turmoil in:
  – Financial Centers
  – Crisis-prone emerging markets

• **Weak-Form Globalization:** The frequency distribution of returns around the world changes when conditioning on days of turmoil in one financial center or in one crisis-prone emerging market.

• **Degree of Globalization:** Proportion of countries with different frequency distributions.

• **Use Kolgomorov-Smirnov test.**
### Table 4  
**Weak-Form Globalization of Turmoil**  
Regional and World Effects

<table>
<thead>
<tr>
<th>REGIONS</th>
<th>Percentage of Countries with Anomalous Returns when Turmoil in</th>
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<tbody>
<tr>
<td></td>
<td>GERMANY</td>
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<tr>
<td>Asia</td>
<td>43</td>
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<tr>
<td>Europe</td>
<td>71</td>
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<td>G7</td>
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<td>Latin America</td>
<td>43</td>
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<td>Transition Economies</td>
<td>57</td>
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<td>World</td>
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<td>Asia</td>
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<td>Europe</td>
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<td>G7</td>
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<td>Transition Economies</td>
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</tr>
<tr>
<td>World</td>
<td>76</td>
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Weak-Form Globalization  
Regional and World Effects

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<td>Wilcoxon Statistic (W)</td>
<td>1320</td>
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BRAZIL RUSSIA THAILAND
Strong-Form Globalization

• Again, focus on days of turmoil, which are defined as days with returns in the 5th and 95th percentiles.

• Examine the degree of spillover conditional on turmoil in:
  – Financial Centers
  – Crisis-prone emerging markets

• Strong-Form Globalization: Coincidence of turmoil.

• Degree of Globalization: Proportion of countries with turmoil.
Strong-Form Globalization

We use a multinomial-logit and order-logit regression techniques:

- The dependent variable captures degrees of globalization. There are three categories:
  - Low Globalization: Only up to 25 percent of the countries have turmoil
  - Medium Globalization: 25 to 50 percent of the countries have turmoil
  - High Globalization: More than 50 percent of the countries have turmoil

- The explanatory variables are (0,1) dummy variables that reflect days of turmoil in:
  - A crisis-prone emerging market (no financial center affected)
  - A crisis-prone emerging market (financial center affected)
  - Financial Center
## Strong Form Globalization

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<tr>
<td></td>
<td>TURMOIL IN GERMANY</td>
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<tr>
<td>Low</td>
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<td>Medium</td>
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<td>77</td>
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Strong-Form Globalization Results

• When there is turmoil in Financial Centers the probability of at least medium globalization is 50 percent.

• Turmoil in Crisis-Prone Emerging Markets
  – Triggers high globalization of turbulences with a 50 percent probability if financial centers are affected
  – Triggers low globalization of turbulences with a 50 percent probability if financial centers are not affected
The Origins of Turmoil

• We construct a chronology of news from Bloomberg for the days of high world and regional globalization.

• We find that:
  – News about financial institutions are at the heart of worldwide globalization events.
  – Other economic news or political news trigger mostly regional globalization events.

• Interestingly, 85 percent of all high worldwide globalization events are crashes.

• Also, events of high worldwide globalization are characterized by more drastic shocks.
Conclusions: The Center or the Periphery?

- We need to understand the circuitous route that financial shocks often traverse.

- Problems occur synchronously in many emerging markets—the periphery—because a shock in one of them first influences a financial center.

- If a shock never reaches a center, it is doubtful it can become systemic, whatever our definition of systemic is.